HUMAN CREMATORY
AIR GENERAL PERMIT REGISTRATION FORM

Part II. Notification to Permitting Office

(Detach and submit to appropriate permitting office; keep copy onsite)

Instructions: To give notice to the Department of an eligible facility's intent to use this air general permit, the owner or operator of the facility must detach and complete this part of the Air General Permit Registration Form and submit it to the appropriate Department of Environmental Protection or local air pollution control program office which has permitting authority. Please type or print clearly all information, and enclose the appropriate air general permit registration processing fee pursuant to Rule 62-4.050, F.A.C. *($100 as of the effective date of this form)*

0950126-006

Registration Type

Check one:

INITIAL REGISTRATION - Notification of intent to:

- ☐ Construct and operate a proposed new facility.
- ☐ Operate an existing facility not currently using an air general permit (e.g., a facility proposing to go from an air operation permit to an air general permit).

RE-REGISTRATION (for facilities currently using an air general permit) - Notification of intent to:

- ☒ Continue operating the facility after expiration of the current term of air general permit use.
- ☐ Continue operating the facility after a change of ownership.
- ☐ Make an equipment change requiring re-registration pursuant to Rule 62-210.310(2)(e), F.A.C., or any other change not considered an administrative correction under Rule 62-210.310(2)(d), F.A.C.

Surrender of Existing Air Operation Permit(s) - For Initial Registrations Only

If the facility currently holds one or more air operation permits, such permit(s) must be surrendered by the owner or operator upon the effective date of this air general permit. In such case, check the first box, and indicate the operation permits being surrendered. If no air operation permits are held by the facility, check the second box.

- ☐ All existing air operation permits for this facility are hereby surrendered upon the effective date of this air general permit; specifically permit number(s): _____
- ☐ No air operation permits currently exist for this facility.

General Facility Information

Facility Owner/Company Name (Name of corporation, agency, or individual owner who or which owns, leases, operates, controls, or supervises the facility.)
Baldwin Fairchild Funeral Homes

Site Name (Name, if any, of the facility site; e.g., Plant A, Metropolis Plant, etc. If more than one facility is owned, a registration form must be completed for each.)
Baldwin Fairchild Funeral Homes - Ivanhoe Chapel

Facility Location (Provide the physical location of the facility, not necessarily the mailing address.)
Street Address:301 NE Ivanhoe Boulevard
City:Orlando County:Orange Zip Code:32804

Facility Start-Up Date (Estimated start-up date of proposed **new** facility.) (N/A for existing facility)
NA

Owner/Authorized Representative

Name and Position Title (Person who, by signing this form below, certifies that the facility is eligible to use this air general permit.)
Print Name and Title: Liam B. Smith, Care Center Manager

Owner/Authorized Representative Mailing Address
Organization/Firm: Baldwin Fairchild Funeral Homes - Ivanhoe Chapel
Street Address: 301 NE Ivanhoe Boulevard
City: Orlando County: Orange Zip Code: 32804

Owner/Authorized Representative Telephone Numbers
Telephone: 407-898-8111 Fax: 407-898-7496
Cell phone (optional):

Facility Contact (If different from Owner/Authorized Representative)

Name and Position Title (Plant manager or person to be contacted regarding day-to-day operations at the facility.)
Print Name and Title:

Facility Contact Mailing Address
Organization/Firm:
Street Address:
City: County: Zip Code:

Facility Contact Telephone Numbers
Telephone: Fax:
Cell phone (optional):

Owner/Authorized Representative Statement

This statement must be signed and dated by the person named above as owner or authorized representative

I, the undersigned, am the owner or authorized representative of the owner or operator of the facility addressed in this Air General Permit Registration Form. I hereby certify, based on information and belief formed after reasonable inquiry, that the facility addressed in this registration form is eligible for use of this air general permit and that the statements made in this registration form are true, accurate and complete. Further, I agree to operate and maintain the facility described in this registration form so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof.

I will promptly notify the Department of any changes to the information contained in this registration form.

Signature

6-24-09
Date

Design Calculations

If this is an initial registration for a proposed new human crematory unit, provide design calculations to confirm a sufficient volume in the secondary chamber combustion zone to provide for at least a 1.0 second gas residence time at 1800 degrees F.

☐ Manufacturer's' design calculations attached.

☒ Registration is not for proposed new human crematory unit(s).

Description of Facility

Below, or as an attachment to this form, provide a description of all crematory operations at the facility in sufficient detail to demonstrate the facility's eligibility for use of this air general permit and to provide a basis for tracking any future equipment or process changes at the facility. Describe all air pollutant-emitting processes and equipment at the facility, and identify any air pollution control measures or equipment used.

Baldwin Fairchild Funeral Homes Operates two human crematories at this location.

EU001 is a Crawford C1000 is a multi-chamber unit having an average 150 lbs/hr (One body and associated container per cremation cycle, approximately 1,000 Btu/lb). The primary chamber burner is rated at 500,000 Btu/hr, and the secondary chamber burner is rated at 1,000,000 Btu/hr, for a total of 1,500,000 Btu/hr. Control of air pollution is achieved through the design of the C1000H crematory, including its ability to operate the secondary chamber between 1600 - 1850 degrees Fahrenheit at a residence time in excess of 1.0 second. The design also includes fully automatic PLC based controls, independent fuel/air systems, preheated combustion air, secondary chamber temperature monitor an recorder, primary burner temperature interlock (prevents primary burner from firing prior to the secondary chamber reaching it's set point temperature), UV continuous scanning flame detectors on burners, and an opacity sensor which can temporarily suspends operation of the primary chamber burner.

EU002 is a Matthews Power Pak II multi-chamber unit having an average 150-lbs/hr cremation rate (one body and associated container per cremation cycle, approximately 1,000 Btu/lb). The total firing rate of the crematory is 1,800,000 Btu/hr. Control of air pollution is achieved through the design of the PowerPak II crematory, including its ability to operate the secondary chamber between 1600 - 1850 degrees Fahrenheit at a residence time in excess of 1.0 second. UV continuous scanning flame detectors on burners, and an opacity sensor which can temporarily suspend operation of the primary chamber burner.

In Attachment 1, we have included a copy of the crematory test results and in Attachment 2 the equipment drawings and brochures.

Attachment 1
Compliance Test Reports

Crawford Equipment C1000H

COASTAL AIR CONSULTING INC.

1531 Wyngate Drive DeLand, FL 32724
Phone (386) 943 9241 / Cell (386) 451-0169 / Fax (386) 943 9212

COMPLETE EMISSIONS TESTING SERVICES • PERMITTING ASSISTANCE • CEMS CERTIFICATION • AMBIENT AIR MONITORING

Emissions Test Report

No. 127-004

PALM STATE MORTUARY SERVICES, LLC

PARTICULATE EMISSIONS
CARBON MONOXIDE &
VISIBLE EMISSIONS

Prepared for:

Palm State Mortuary Services, LLC
12660 34th St. North
Clearwater, FL 33762

Prepared by:

Coastal Air Consulting, Inc.
1531 Wyngate Dr.
DeLand, FL 32724
(386) 943-9241

August 12, 2005

STATEMENT OF VALIDITY

All testing activities and results represented herein were conducted and obtained in accordance with the approved EPA protocols listed in 40 CFR Part 60. The contents have been reviewed and verified to be true and correct.

Stephen C. Webb

Stephen C. Webb

President
Coastal Air Consulting, Inc.
1531 Wyngate Dr.
DeLand, FL 32724
(386) 943-9241

PROJECT STATISTICS

Client:	Palm State Mortuary Services, LLC
Facility:	Palm State Mortuary Services, LLC
Location:	12660 34th St. North Clearwater, FL 33762
Type of Process Tested:	Crawford Industrial Group Model C1000H Human Cremation Incinerator
Permit Number:	1030473-005-AC
Emission Unit ID Number:	"1030473/EU 002"
Test Protocols Performed:	Particulate-EPA Method 5 Opacity-EPA Method 9 Carbon Monoxide- EPA Method 10
Testing Firm:	Coastal Air Consulting, Inc. 1531 Wyngate Dr. DeLand, FL 32724
Test Personnel:	Steve Webb President Taylor Smith Technician
Test Date:	August 4, 2005
Client Representative:	Jay Tassillo
Observers:	Jose Rodriguez – Pinellas County – Air Quality Shannon Ransom – Pinellas County – Air Quality

1.0 Introduction

Coastal Air Consulting, Inc. (Coastal) was contracted by Palm State Mortuary Services, LLC to perform compliance testing for particulate, carbon monoxide and visible emissions on the Crawford C1000H Series, 150 lb/hr cremation system located in Clearwater Florida.

The sampling program was conducted on August 4, 2005. The testing was performed by Coastal personnel, with the assistance of personnel assigned by Palm State Mortuary Services. Mr. Thomas Tassillo coordinated plant operations during the testing.

2.0 Test Program Summary

A summary of test results developed by this source sampling program is presented in TABLES 1, 2 and 3 as follows;

TABLE 1
Summary of Particulate Emissions

Source	Particulate Grains/dscf @ 7% O2	Allowable Grains/dscf @ 7% O2
Human Cremation Unit	0.0303	0.08

TABLE 2
Summary of Visible Emissions

Source	Average VE %	Allowable %	Highest 3min. Avg. %	Allowable %
Human Cremation Unit	0.0	5.0	0.0	20.0

TABLE 3
Summary of CO Emissions

Source	CO ppm @ 7% O2	Permit ppm @ 7 % O2
Human Cremation Unit	7.02	100

3.0 Results of Testing

Individual test run results are shown in Table 4 and are tabulated in Appendix 1. These results indicate that the Crawford C1000H human cremation unit was in compliance at the time of testing under normal operating conditions.

4.0 Description of Source

The Crawford C1000H Series is a multiple chambered, controlled air, hot hearth human crematory. The capacity rating is 150 lb/hr and has a 65.37 cubic foot primary chamber followed by a 69.29 cubic foot secondary chamber. The maximum total heat input rate is 2.0 mmBtu/hr (0.5 mmBtu/hr primary chamber and 1.5 mmBtu/hr secondary chamber).

The emissions are controlled by the afterburner which maintains a minimum secondary chamber combustion zone temperature of 1,600 ^{0}F prior to and during combustion of material in the primary chamber. The secondary chamber requires at least a one second residence time at a gas temperature of 1,800 ^{0}F. The secondary chamber is continuously monitored and recorded.

The flue gas is exhausted through the C1000H stack. A schematic of the process and stack sampling location is included in Appendix 3 "Figures".

5.0 Sampling Procedures

EPA testing protocols utilized during this test program include the following;

EPA Method 1	Sample and Velocity Traverse for Stationary Sources
EPA Method 2	Determination of Stack Gas Velocity and Volumetric Flow Rate
EPA Method 3A	Gas Analysis for CO2, O2, Excess Air and Dry Molecular Weight (Instrumental Analyzer Method)
EPA Method 4	Determination of Moisture Content in Stack Gas
EPA Method 5	Determination of Particulate Emissions from Stationary Sources
EPA Method 9	Visual Determination of The Opacity of Emissions From Stationary Sources
EPA Method 10	Determination of Carbon Monoxide Emissions From Stationary Sources

The test runs were conducted in triplicate for all parameters with each being at leas minutes in duration.

The eight and two-diameter criterion was not met, so the traverse points were determine from figure 1-1 and table 1-2 in 40 CFR Part 60, App. A, Method 1

6.0 Operating Conditions

Palm State Mortuary Services personnel monitored operating conditions throughout the duration of the sampling program. The unit was operating under normal conditions at approximately 1650 ^{0}F and150 lb/hr.

7.0 Quality Assurance Procedures

Quality assurance procedures followed during these activities were applied consistent with the requirements outlined by the EPA methods referenced in 40 CFR Part 60. Analyzer calibrations, system bias and drift checks were completed before and after each sample run utilizing EPA Protocol 1 calibration gases.

TABLE 4
COASTAL AIR CONSULTING, INC.

PARTICULATE EMISSION TEST SUMMARY

CLIENT: Palm State Crematory
UNIT: Crawford C1000H

METHOD: 5

	RUN 1	RUN 2	RUN 3
DATE OF RUN	8/4/05	8/4/05	8/4/05
START TIME (24-HR CLOCK)	1028	1325	1545
END TIME (24-HR CLOCK)	1141	1429	1650
VOL DRY GAS SAMPLED METER COND (DCF)	50.888	49.064	50.713
BAROMETRIC PRESSURE (IN. HG)	29.98	29.98	29.98
AVG ORIFICE PRESSURE DROP (IN. H20)	2.267	2.168	2.292
AVG GAS METER TEMP (F)	82.7	87.9	89.3
GAS METER CALIBRATION FACTOR	1.0060	1.0060	1.0060
VOL GAS SAMPLED STD COND (DSCF)	50.169	47.897	49.395
TOTAL WATER COLLECTED (G)	110.7	96.2	81.6
VOL WATER COLLECTED STD COND (SCF)	5.22	4.54	3.85
MOISTURE IN STACK GAS (% VOL)	9.42	8.65	7.23
MOLE FRACTION DRY GAS	0.906	0.913	0.928
CO2 VOL PERCENT DRY	4.0	5.1	4.2
O2 VOL PERCENT DRY	14.8	13.8	15.0
N2 VOL PERCENT DRY	81.20	81.10	80.80
MOL. WT. DRY STACK GAS (LB/LB-MOLE)	29.23	29.37	29.27
MOL. WT. WET STACK GAS (LB/LB-MOLE)	28.17	28.38	28.46
ELEV. DIFF. FROM MANOM. TO BAROM. (FT)	0.00	0.00	0.00
STACK GAS STATIC PRESSURE (IN. H2O GAGE)	0.01	0.01	0.01
STACK GAS STATIC PRESSURE (IN. HG ABS.)	29.98	29.98	29.98
AVERAGE SQUARE ROOT VELOCITY HEAD	0.334	0.323	0.327
PITOT TUBE COEFFICIENT	0.84	0.84	0.84
AVG STACK TEMP (F)	819.0	922.3	891.4
STACK GAS VELOCITY STACK COND (FT/SEC)	29.55	29.54	29.57
CROSS SECTION STACK AREA (SQ FT)	2.2	2.2	2.2
STACK GAS FLOW RATE STD COND (DSCFM)	1461.5	1363.6	1417.8
STACK GAS FLOW RATE STACK COND (ACFM)	**3900.8**	**3900.1**	**3903.7**
NET TIME OF RUN (MIN)	60	60	60
NOZZLE DIAMETER (IN)	0.489	0.489	0.489
PERCENT ISOKINETIC	96.56	98.81	98.00
PARTICULATE COLLECTED (MG)	21.7	39.2	69.0
RESIDENCE TIME (SEC)	**1.53**	**1.44**	**1.46**
PARTICULATE EMISSIONS (GRAINS/SCF)	0.0067	0.0126	0.0216
PARTICULATE EMISSIONS (GRAINS/SCF) @ 7%O2	**0.0152**	**0.0247**	**0.0508**
PARTICULATE EMISSIONS (LBS/HR)	0.084	0.148	0.262
PARTICULATE EMISSIONS (LBS/HR) @ 7% O2	**0.190**	**0.289**	**0.617**
AVERAGE PARTICULATE EMISSIONS (GRAINS/SCF)		0.0136	
AVERAGE PARTICULATE EMISSIONS (GRAINS/SCF) @ 7%O2		**0.0302**	
AVERAGE PARTICULATE EMISSIONS (LBS/HR)		0.1644	
AVERAGE PARTICULATE (LBS/HR) @ 7% O2		**0.3655**	

NOTE: STANDARD CONDITIONS – 68F, 29.92 in. Hg

EPA

VISIBLE EMISSION OBSERVATION FORM 1

Method Used (Circle One): Method 9 / 203A / 203B / Other: _____

Company Name: Palm State Crematory
Facility Name: Palm State Crematory
Street Address: 12660 34th St. North
City: Clearwater | State: FL | Zip: 33762

Process: Human Cremation | Unit #: Eloge H | Operating Mode: 1600
Control Equipment: After burners | Operating Mode: ON

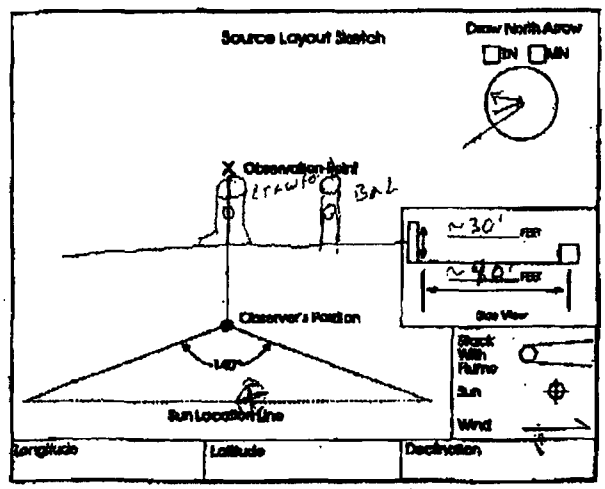
Describe Emission Point: Round Black Stack, Eastern most of TWO
Height of Emis. Pt. Start: ~30' above grade | End: " | Height of Emis. Pt. Rel. to Observer Start: ~2' above roof | End: "
Distance to Emis. Pt. Start: ~40' | End: " | Direction to Emis. Pt. (Degrees) Start: ~79° | End: "

Vertical Angle to Obs. Pt. Start: <18° | End: " | Direction to Obs. Pt. (Degrees) Start: ~79° | End: "
Distance and Direction to Observation Point from Emission Point Start: ~1' above | End: "

Describe Emissions Start: Clear Heat Waves | End: "
Emission Color Start: Clear | End: " | Water Droplet Plume: Attached ☐ Detached ☐ None ☑

Describe Plume Background Start: SKY | End:
Background Color Start: Gray | End: " | Sky Conditions Start: overcast | End: "
Wind Speed Start: 3-5mph | End: " | Wind Direction Start: NW | End: "
Ambient Temp. Start: ~92°F | End: " | Wet Bulb Temp. | RH Percent

Source Layout Sketch — Draw North Arrow ☐ N ☐ MN



Longitude | Latitude | Declination

Additional Information: VE Was done From Roof Top, during Particulate Run # 2.

VEOF1.1

Form Number | Page 1 of 1
Continued on VEO Form Number

OBSERVATION DATE 8-4-05	START TIME 1325-1344	STOP TIME 1359-1429

SEC / MIN	0	15	30	45	SEC / MIN	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

AVERAGE OPACITY FOR HIGHEST PERIOD: 0 | NUMBER OF READINGS ABOVE 0 % WERE 0

RANGE OF OPACITY READINGS: MINIMUM 0 | MAXIMUM 0

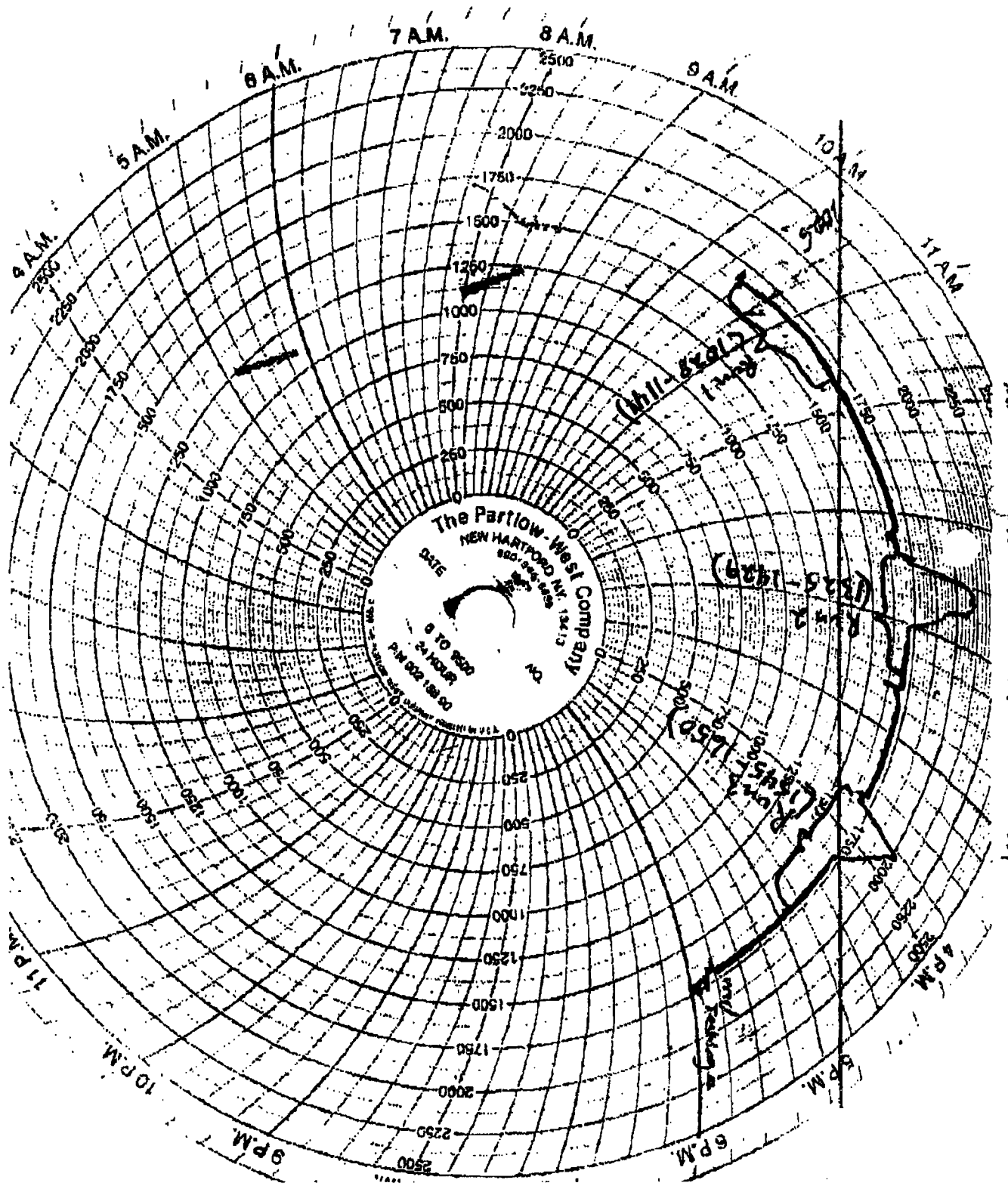
OBSERVER'S NAME (PRINT): Stephen C. Webb

OBSERVER'S SIGNATURE: Stephen C. Webb | DATE: 8-4-05

ORGANIZATION: Coastal Air Consulting, Inc.

CERTIFIED BY: Willow Enterprises | DATE: 7-13-05

VERIFIED BY: — | DATE: —


7 A.M.
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5 P.M.
9 P.M.
6 P.M.
2500
2250
2000
1750
1500
1250
1000
750
500
250
0
The Partlow - West Company
NEW HARTFORD, NY.
6 TO 6500
24 HOUR

Matthews Cremation PPII

AIR COMPLIANCE TEST REPORT

PERMIT NO. 0950126-005-AG

IE43-PPII, POWER-PAK II CREMATORY INCINERATOR

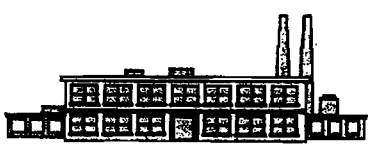
PREPARED FOR:

BALDWIN FAIRCHILD

ORLANDO, FLORIDA
MAY 5, 2005

PREPARED BY:

ATC



AIR TESTING & CONSULTING, INC.

333 FALKENBURG ROAD, SUITE B-214
TAMPA, FLORIDA 33619

FACILITY NAME:	**Baldwin Fairchild**	**TEST DATE:**	**5/5/2005**
PERMIT NUMBER:	**0950126**	**TESTED BY:**	**ACT, Inc.**
EVALUATION BY:	**JMK**	**EVAL. DATE:**	**6/16/2005**

SOURCE: Power Pak II

METHOD 5/10: PARTICULATE & CO EMISSIONS

RUN #	1	2	3		Definition
^H("H2O)	1.019	1.163	1.405		Average DH
SQRT ^p	0.211	0.186	0.205		Average sqrt(delta p)
tm	69.4	70.2	71.0		Meter temp, F
ts	845.5	995.9	1128.5		Stack temp, T
Pb	30.15	30.15	30.15		Barometric pressure
Pg	0.04	0.04	0.03		Stack static pressure, inH2O
Vm	34.375	36.840	40.110		Air sample volume, CF
Y	0.9990	0.9990	0.9990		Dry gas meter correction
%CO2	NOT GIVEN	NOT GIVEN	NOT GIVEN		
%O2	16.0	14.0	14.5		
Vlc (ml)	105.0	85.0	60.0		Water collected
Mn (mg)	28.4	133.6	19.8		Particulate total weight
Cp	0.840	0.840	0.840		Pitot tube correction
As	2.074	2.074	2.074		Stack cross section, sqft
dn	0.550	0.550	0.550		Nozzle dia, inches
time	60	60	60		Run time, minutes

RUN #	1	2	3	**AVERAGES**	
As	2.074	2.074	2.074		Stack area
An	1.65E-03	1.65E-03	1.65E-03		Nozzle area
Ps	30.15	30.15	30.15		Stack pressure
Pm	30.22	30.24	30.25		Meter pressure
Md	30.00	30.00	30.00		Dry gas mol weight
Vwstd	4.94	4.00	2.82		Water volume
Vmstd	34.588	37.020	40.270		Meter volume
Bws	12.5	9.8	6.6	**9.6 %**	
Bws THEO	100	100	100		
Bws meas.	12.5	9.8	6.6		% Moisture
Ms	28.50	28.83	29.21		Stack gas mol weight
Vs	18.70	17.32	19.75	**18.59 fs**	Stack velocity
Qa	2327	2155	2458	**2313 acfm**	Gas flow, ACFM
Qstd	829	711	769	**770 sdcfm**	Gas flow, SCFM
vn	97.0	112.3	128.7		Volume through nozzle
Tvlc					
% ISOKINETIC	87.4	109.2	109.7	**102.07 %**	
Concentration (Cs)	0.013	0.056	0.008	**0.0253 gr/sdcf**	
Particulate Mass Rate	0.090	0.339	0.050	**0.1597 lb/hr**	
PMR	0.0359	0.1122	0.0165	**0.0549 gr/sdcf@7%O2**	
CO (ppm)	0.500	1.000	1.500	**1.000 ppm**	
CO (lb/hr)	0.002	0.003	0.005	**0.003 lb/hr**	
CO (ppm)@7% O2	1.418	2.014	3.258	**2.230 ppm @7%O2**	

ATC

AIR TESTING & CONSULTING, INC.

333 FALKENBURG ROAD, SUITE B-214
TAMPA, FLORIDA 33619

To the best of my knowledge, all field and analytical procedures comply with Florida Department of Environmental Protection requirements and all test data and plant operating data are true and correct.

Kenneth E. Given

Kenneth E. Given, P.E.

5-18-05

Date

TABLE OF CONTENTS

APPENDICES

1.0 INTRODUCTION

On May 5, 2005, Air Testing & Consulting, Inc., conducted the following tests on Baldwin Fairchild's Human Crematory Incinerator located at 301 N. Ivanhoe Blvd. in Orlando, Florida:

(1) Particulate Emission (EPA Methods 1 – 5)

(2) Carbon Monoxide (EPA Method 10)

(3) Visible Emissions (EPA Method 9)

(4) Oxygen (EPA Method 3A)

These tests were performed at the request of Mathews Cremation Division to prove compliance on the Power Pak II crematory incinerator. Orange County, Environmental Protection Division, representatives, Gregory Bryant, Ilka Bundy and John Casper audited the test.

2.0 SUMMARY OF RESULTS

The results of the emission testing are presented in the Test Summary. The Particulate emissions averaged 0.0549 grains per dry standard cubic foot (gr/dscf) and CO emissions averaged 2.2 parts per million (ppmv), each corrected to 7% O_2. Opacity, highest six-minute average, on the stack, was 0%.

REGULATORY SUMMARY
BALDWIN FAIRCHILD
HUMAN CREMATORY
MAY 5, 2005

PERMIT NO. NEDS NO. ID #	EPA METHOD	METHOD DESCRIPTION	ACTUAL EMISSION RATE	ALLOWABLE EMISSION RATE	PROCESS RATE POUNDS PER HOUR	
					ACTUAL	PERMIT
0950126-005-AG	5	PARTICULATE			68	100
0126		*gr/dscf @ 7% O2*	*0.055*	*0.080*		
	10	CARBON MONOXIDE				
		ppmv @ 7% O_2	2	100		
	9	VISIBLE EMISSIONS				
		% Opacity	0	5% except for 20% up to 3 min/hr		

TABLE I
TEST SUMMARY
BALDWIN FAIRCHILD
HUMAN CREMATORY
MAY 5, 2005

RUN #	% O_2	PARTICULATE GR/DSCF @ 7% O_2	CO ppmv @ 7% O_2	PROCESS RATE POUNDS
1	16	0.0359	1.4	150
2	14	0.1122	2.0	130
3	14.5	0.0165	3.3	130
AVG	14.8	0.0549	2.2	137

3.0 SUMMARY OF TEST DATA

PLANT : BALDWIN UNIT : POWER-PACK II RUN NUMBERS :1, 2, 3

TEST DATE : 5/5/05	#1	#2	#3	AVERAGES
DATE	5/5/05	5/5/05	5/5/05	
START TIME	10:32	13:05	15:27	
END TIME	11:50	14:09	16:29	
STACK DIAMETER (INCHES)	19.5	19.5	19.5	
NOZZLE DIAMETER (INCHES)	0.550	0.550	0.550	
TEST TIME (MINUTES)	60	60	60	
NUMBER OF TEST POINTS PER RUN	24	24	24	
STACK GAS TEMPERATURE (°F)	850.0	991.8	1128	989.9
STACK GAS MOISTURE (%)	12.51	9.76	6.56	
STACK GAS MOLECULAR WEIGHT	28.50	28.83	29.21	
STACK GAS VOLUME SAMPLED (CUBIC FEET)	34.375	36.840	40.110	37.108
VOLUME SAMPLED (SCF @ 68°F)	34.585	37.020	40.270	37.292
STACK GAS VELOCITY (FEET PER SECOND)	18.14	17.30	19.75	18.39
STACK GAS FLOW RATE (ACFM)	2257.0	2152.2	2457.7	2288.9
STACK GAS FLOW RATE (DSCFM @ 68°F)	801.7	711.5	769.2	760.8
OXYGEN, %	16.0	14.0	14.5	
PARTICULATE CONC (GR/DSCF) @7% O_2	0.0359	0.1122	0.0165	**0.0549**
PARTICULATE MASS RATE (LBS/HOUR)	0.0871	0.3396	0.0500	**0.1589**
CO CONC @ 7% O_2, ppmv	1.42	2.01	3.26	**2.23**
CO MASS RATE (LBS/HOUR)	0.00175	0.00310	0.00503	**0.0033**
ISOKINETIC SAMPLING RATE, %I	90.4	109.0	109.7	

FIELD DATA AND SAMPLES UNDER THE CONTROL OF: TIM CAPELLE

LABORATORY ANALYSIS UNDER THE CONTROL OF: ATC

4.0 PROCESS DESCRIPTION

The facility operates a Matthews Power Pak II crematory for the purpose of disposing of human remains. The unit is rated at 100 lbs/hr and operates on a two hour cycle. See attached flow diagram. The design firing rate to the primary chamber is 0.7 MMBtu/hr and the rate to the afterburner is 1.2 MMBtu/hr.

After the secondary chamber has been heated sufficiently, the cremator burner ignites and the cremation process is initiated. A typical cremation takes from 1 to 2 hours, but the time may vary depending on the body weights and various other factors. (See "Crematory Process Flow Diagram").

VI

p1 of 2

CREMATOR MASS BALANCE

Industrial Equipment & Engineering Co.
Power-Pak II Crematory Incinerator, Fired on Gas

23-May-01

THESE CALCULATIONS HAVE BEEN PREPARED TO EVALUATE THE COMBUSTION PROCESS IN THE POWER-PAK II CREMATORY INCINERATOR

THE INCINERATOR INSTITUTE OF AMERICA HAS PUBLISHED THE FOLLOWING SPECIFICATIONS COVERING AVERAGE WASTES.

WASTE TYPE	TYPE 0	TYPE 4
BTU PER POUND	8500	1000
POUND ASH PER POUND WASTE	0.05	0.05
POUND MOISTURE PER POUND WASTE	0.1	0.85
POUND COMBUSTIBLES PER POUND WASTE	0.85	0.1
HOURLY CONSUMPTION OF WASTE (LBS)	20	80

SPECIFICATIONS		
PRIMARY BURNER FUEL CONSUMPTION (MMBTU/HR)	0.6	
SECONDARY BURNER FUEL CONSUMPTION (MMBTU/HR)	1.2	
ADDITIONAL SECONDARY AIR SUPPLIED (SCFM)	150	
SEC. CHAMBER OPERATING TEMPERATURE (°F)	1800	(actual operating temp
SECONDARY CHAMBER VOLUME (CU. FT)	70	is 1600 deg. F min.)
SEC. CHAMB. CROSS-SECTIONAL AREA (SQ. FT)	2.7	
FLAME PORT AREA (SQ. FT)	2.8	
MIXING BAFFLES AREA (SQ. FT)	1.4	

I. TOTAL FLUE PRODUCTS

A. PRIMARY BURNER GAS USAGE

$$600000 \text{ BTU/HR} \times \frac{0.045 \text{ LBS/CF}}{1000 \text{ BTU/CF}} = 27 \text{ LBS/HR}$$

B. COMBUSTION AIR FOR PRIMARY BURNER (100 % Excess Air)

$$\frac{600000 \text{ BTU/HR}}{100 \text{ BTU/SCF AIR}} \times 2 \times 0.075 \text{ LB/CF AIR} = 900 \text{ LBS/HR}$$

C. SECONDARY BURNER GAS USAGE

$$1200000 \text{ BTU/HR} \times \frac{0.045 \text{ LBS/CF}}{1000 \text{ BTU/CF}} = 54 \text{ LBS/HOUR}$$

D. COMBUSTION AIR FOR SECONDARY BURNER (50 % Excess Air)

$$\frac{1200000 \text{ BTU/HR} \times}{100 \text{ BTU/SCF AIR}} 1.5 \times 0.075 \text{ LB/CF AIR} = 1350 \text{ LBS/HOUR}$$

E. PRODUCTS FROM TYPE 0 WASTE (CONTAINER)

0.95 LBS/LB BURNED x 20 LB/HR BURN RATE = 19 LBS/HOUR

F. PRODUCTS FROM TYPE 4 WASTE (TISSUE)

0.95 LBS/LB WASTE x 80 LB/HR BURN RATE = 76 LBS/HOUR

G. ADDITIONAL SECONDARY CHAMBER COMBUSTION AIR (THROAT AIR)

9000 SCF/HR x 0.075 LB/CF AIR = 675 LBS/HOUR

H. TOTAL FLUE PRODUCTS = 3101 LBS/HOUR

2. VELOCITY AND TIME CALCULATIONS

A. SCFM CALCULATION (PRODUCTS ASSUMED TO HAVE DENSITY CLOSE TO AIR)

$$3101 \text{ LBS/HR} \times \frac{13.35 \text{ STD. CU. FT/LB}}{60 \text{ MIN/HR}} = 690 \text{ SCFM}$$

B. TOTAL PRODUCTS ACFM @ 1800 °F

$$\frac{2260 \text{ °RANKINE}}{530 \text{ °RANKINE}} \times 690.0 \text{ CFM} = 2942 \text{ ACFM}$$

C. RETENTION TIME

$$\frac{70 \text{ CU. FT}}{2942 \text{ ACFM}} \times \frac{60 \text{ SECONDS}}{1 \text{ MINUTE}} = 1.43 \text{ SECONDS}$$

D. VELOCITY IN FLAME PORT

$$\frac{2942 \text{ ACFM}}{2.8 \text{ SQ. FT}} \times \frac{1 \text{ MINUTE}}{60 \text{ SECONDS}} = 17.5 \text{ FEET/SECOND}$$

E. VELOCITY AT MIXING BAFFLES

$$\frac{2942 \text{ ACFM}}{1.4 \text{ SQ. FT}} \times \frac{1 \text{ MINUTE}}{60 \text{ SECONDS}} = 35.0 \text{ FEET/SECOND}$$

F. VELOCITY IN SECONDARY CHAMBER

$$\frac{2942 \text{ ACFM}}{2.7 \text{ SQ. FT}} \times \frac{1 \text{ MINUTE}}{60 \text{ SECONDS}} = 18.2 \text{ FEET/SECOND}$$

Attachment 2
Equipment Drawings and Brochures

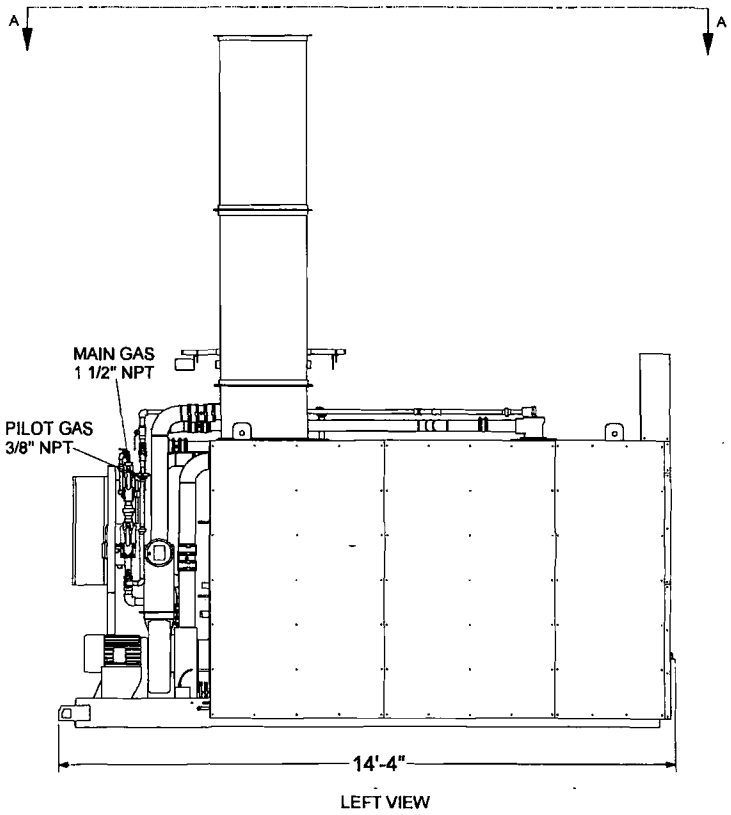
Crawford C1000H

CRAWFORD ELITE HUMAN CREMATION SYSTEM SPECIFICATIONS

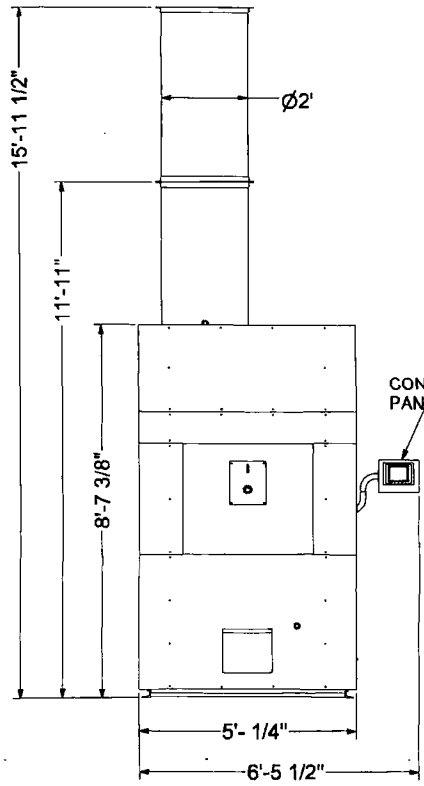
Model:	Elite Model C100011 Multiple Chambered, Controlled Air, Hot Hearth, Human Crematory
Recognized Approvals:	Underwriters Laboratory (U.L.) Listed (Control # 54E3)
Capacity ratings:	150 lb./hr. for type 4 pathological
Overall dimensions:	14' 5" L x 5' 1" W* x 8' 7.5" H * (6' 5" W w/ touch screen)
Approx. system weight:	24,500 lbs.
Required fuel (NG/LPG): **(light oil fired optional):**	Main .2 MMBtu/hr @ 11-14" w.c. @ 1.5" header Pilot .2 MM Btu/hr @ 5 psi, max. @ 3/8" regulator
Required electrical supply:	230/460 V, 3 phase, 60 Hz (50 Hz & alt. voltage available) 40/30 amps @ single point connection
Primary chamber volume:	60.17 cu. ft.
Hearth Area:	20.7 sq. ft. (71.5"L x 48.0"W)
Secondary chamber volume:	69.29 cu. ft. (provides 2 sec. retention)
Primary burner capacity:	500,000 Btu/hr. (hi/lo modulated control)
Secondary burner capacity:	1,500,000 Btu/hr. (fully modulated control)
Combustion air fan:	1400 scfm 7.5hp, 230/460 V, 3 phase, std. (1 phase, optional)
Charging/cleanout door:	37"W x 30"H hydraulic actuated
Hydraulic power unit:	1.5 hp, 230/460 V, 3 phase, 4.4 gpm, 500 psi, ¾ gal. res.
Steel construction:	8", heavy steel channel skid base frame 2 x 2 x 3/8", 3 x 3 x 1/4" angle & 3/16" sq. tube structure 3/8" end plate (A36 CS plate) 3/16" inner casing (A36 CS plate) 12 gauge A366 outer casing (air cooled removable panels)
Refractory & Insulation:	
Hearth:	7" 13" 3000°F dense cast refractory
Side walls:	70% 4.5 x 2.5 x 9 2700°F fire brick 30% 4.5 x 2.5 x 9 2600°F ins. brick 2" 1900°F & ¾" 550lb insulation backing
PCC roof:	6" 2800°F cast refractory 1.5" 2400°F cast insulation cap
SCC floor:	50% dense / 50% insulating cast refractory 6" thick
Stack:	24"od x 20"id x 48"L sections (16' rise above grade w/ std. 2 sections) 10 ga. CS shell with 2" refractory lining approx. weight 112.5 lb./ft.
Draft control:	via "Induce a Cool" w/temp. reduction to 875°F
Controls (PLC based with):	Touch screen operator interface Primary & secondary chamber temperature control Temperature actuated fuel and air control Burner interface, status and reset access** System status and alarm display Opacity alarm system with control intervention ** Discrete, UL, CSA, FM & IRI burner monitoring/control w/U.V. flame supervision provided for each burner

ELECTRICAL:
SINGLE POINT CONECTION
230/460V, 3 PHASE, 60 HZ, 40/30 AMP
1 PHASE, AND /OR 50 Hz (OPTIONAL)

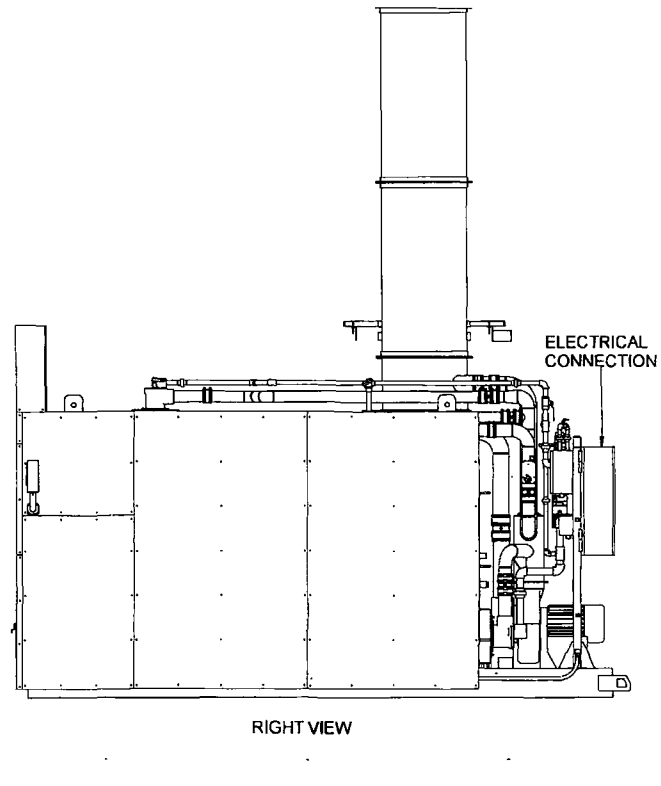
GAS REQUIREMENTS:
FUEL SUPPLY MUST BE CAPABLE OF FLOWING
MAIN 2 MMBTU/ HR @ 11-14" WC @ 1 1/2" HEADER
PILOT .2 MMBTU/ HR @ 5 PSIG MAX @ 3/8" REGULATOR



LEFT VIEW



FRONT VIEW



RIGHT VIEW

NOTE:
ALL ILLUSTRATIONS COVER THE GENERAL APPEARANCE OF CRAWFORD INDUSTRIAL GROUP, LLC PRODUCTS AT THE TIME OF PUBLICATION AND WE RESERVE THE RIGHT TO MAKE CHANGES IN DESIGN AND CONSTRUCTION AT ANY TIME WITHOUT NOTICE.

REV	DATE	DESCRIPTION	NAME

DRAWN Jim L 2/6/2004
RTM
DESIGNER Jim L

CRAWFORD INDUSTRIAL GROUP, LLC
9101 FARRIERS LANDING, ORLANDO,FL 32824 (407) 851-0993

TITLE
C1000H

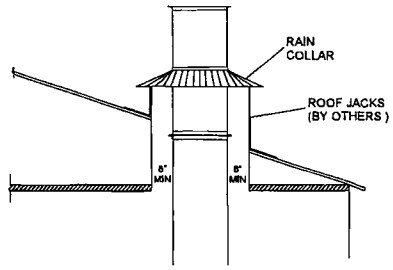
PROJECT NO.	DRAWING	REV
	C1000H-GA	

SIZE D SCALE SHEET 1 OF 2

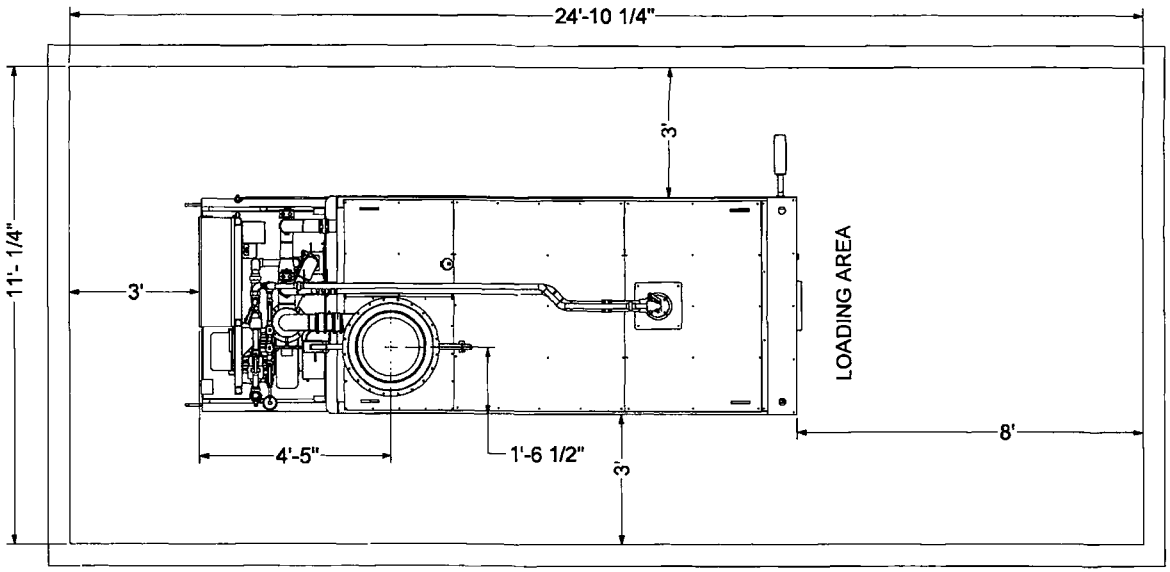
MINIMUM UL. CLEARANCE REQUIRED
SIDES = 24"
REAR = 24"
TOP = 18"
STACK SIDES = 8"

FLOOR TYPE NONCOMBUSTIBLE LOAD BEARING TO SUPPORT 24,500 LBS.
CONSULT LOCAL BUILDING CODES AND ORDINANCES FOR ANY
RESTRICTIONS WHICH MAY APPLY.

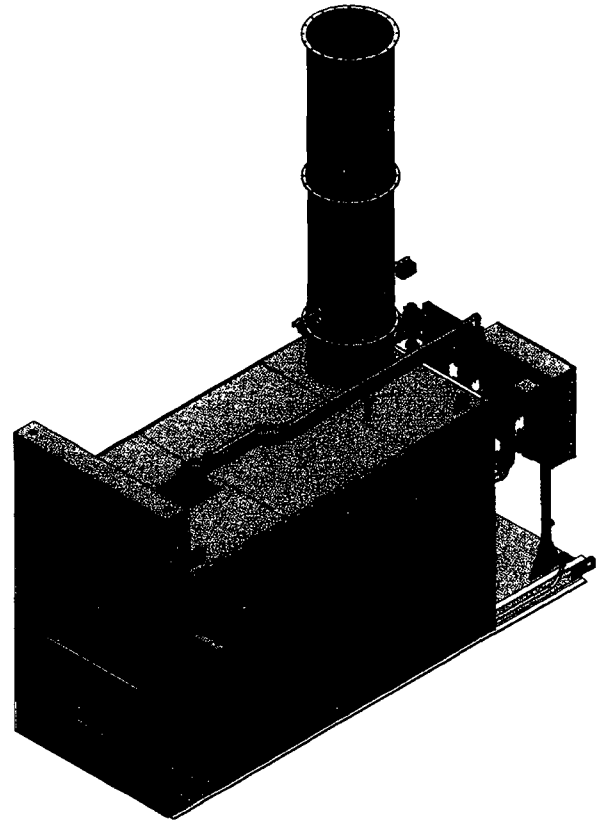
COMBUSTION AIR:
MINIMUM 30" x 30" OUTSIDE AIR VENT
(MAKE UP AIR) - PASSIVE SYSTEM



ROOF DETAIL



VIEW A-A
RECOMMENDED CLEARANCES



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REV	DATE	DESCRIPTION	NAME

DRAWN Jim L 2/5/2004
RTM
DESIGNER Jim L

CRAWFORD INDUSTRIAL GROUP, LLC
9101 PARKERS LANDING, ORLANDO, FL 32824 (407) 851-6993

TITLE
C1000H

PROJECT NO. | DRAWING C1000H-GA | REV

SIZE D | SCALE | SHEET 2 OF 2

Matthews PPII

Matthews
CREMATION DIVISION

Power-Pak II

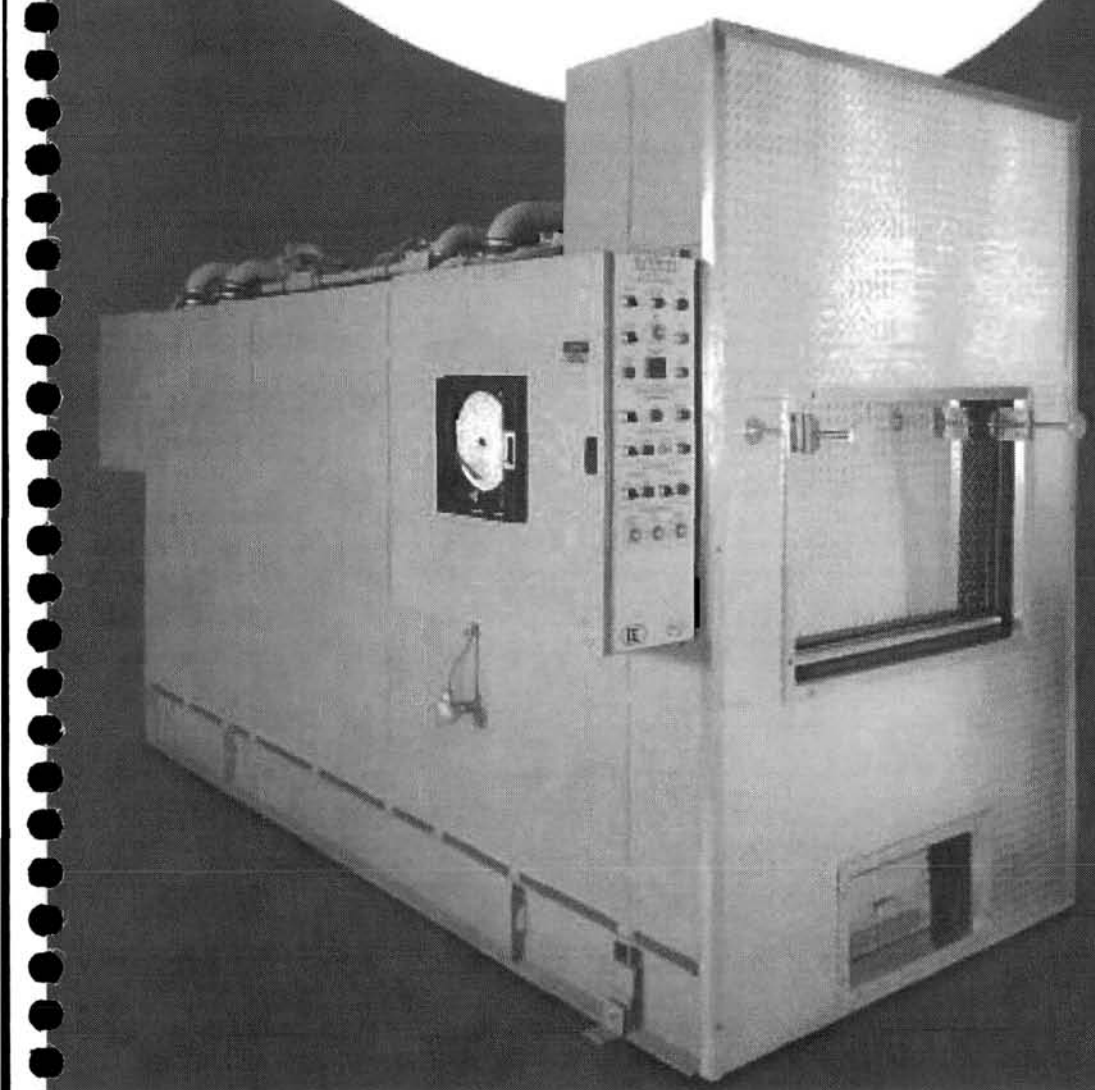
Animal Incineration System

SMOKE-BUSTER™ 140

200 lbs. per/hr. Cremation Rate

750 lbs Safe Load Capacity

Continuous Feed, Batch Load or Individual Cremation



Who is *Matthews Cremation Division?*

Matthews Cremation Division is the successor of the two premier manufacturers of cremation equipment– Industrial Equipment & Engineering (IEE) and ALL Crematory (ALL). We are the global leader in cremation equipment sales, service and repair. Representing the highest standards for safety, we manufacture a wide range of human and animal cremation equipment. As a full-service provider, we offer accessory equipment, supplies and memorial products to meet your business requirements.

Over 95% of our cremators are still operating, including some manufactured more than 40 years ago. Discover why Matthews Cremation Division is the most trusted name in cremation products and services.

The Standard of Excellence in Cremation Solutions.

Matthews Cremation Division (MCD) represents over 100 years of experience in cremator technology and our equipment has set the standard of excellence for quality and performance. With over 3,000 installations in 50 countries, we are the oldest and largest manufacturer in the cremation industry.

From design through startup, our goal is to protect your interest and make certain that your investment in cremation equipment is greeted with the foundation for long-term success. We'll determine your equipment needs, evaluate your facility, design floor plans, guarantee environmental acceptance, assist your contractors in the installation and provide on-site operator training.

Matthews commitment is to go the extra mile...

- Customized Return on Investment Analysis (ROI)
- Zoning Board Assistance
- Operator Certification
- 24/7 Customer Service
- Custom Engineering & Design
- Industry & Trade Support
- Widest array of cremation accessories
- Lease & Finance options.

Quiet Operation– *Exclusive "Whisper Shield" allows operation without disturbing other services.*

Operating Controls– *Simple, color-coded, pushbutton operation.*

Insulation Thickness– *12" of multi-component materials for longest lasting refractory and highest thermal efficiency.*

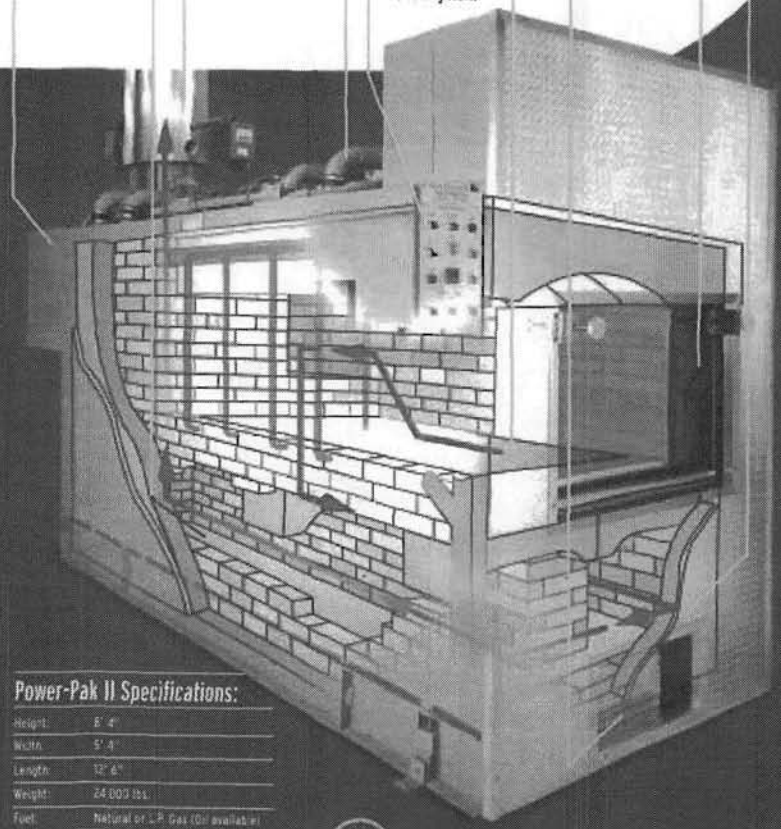
Retrieval System– *Retrieval of cremated remains is safe and quick with the convenient external collection hopper.*

***Infinity* Stainless Steel Stack–** *Non-Corrosive, with 4" refractory lining for strength, durability and safety.*

Dual Cremation Burners– *Two industrial Grade Burners are positioned overhead for higher efficiency and operator safety.*

Cremation Chamber Floor– *Unique "Hot Hearth" design eliminates fluid runoff and minimizes fuel consumption.*

Loading Door– *Self-locking, self-sealing door opens and closes at the push of a button.*



Developed for high volume reliability. Designed for fully automatic operation. Engineered for safe, efficient performance.

The Power-Pak II Animal Incineration System was created to be the system of choice for pet cemeteries, veterinarians, humane societies and animal care facilities. Its innovative characteristics and features make the Power-Pak II the fastest, most fuel efficient pet cremator in its class.

- **Automatic Operation –** The self-monitoring control system simplifies the cremation process, shutting itself off upon completion of the cycle
- **Operator Safety –** Underwriter's Laboratories (UL) listed represents the most widely recognized measure of safety and compliance, ensuring the safety of personnel and facilities
- ***SMOKE-BUSTER*™ 140 –** This feature effectively consumes and destroys smoke and odor from the cremation process
- **Dual Cremation Burners –** Improved operator safety and even burn distribution is provided by two industrial grade burners
- **Pollution Monitoring and Control System –** Automatically checks and regulates stack emissions.

Power-Pak II Specifications:

Height:	8' 4"
Width:	5' 4"
Length:	12' 6"
Weight:	24,000 lbs.
Fuel:	Natural or L.P. Gas (Oil available)
Electrical:	220 volts, 1-phase/3-phase

Control panel can be located right, left or remote

Who is *Matthews Cremation Division?*

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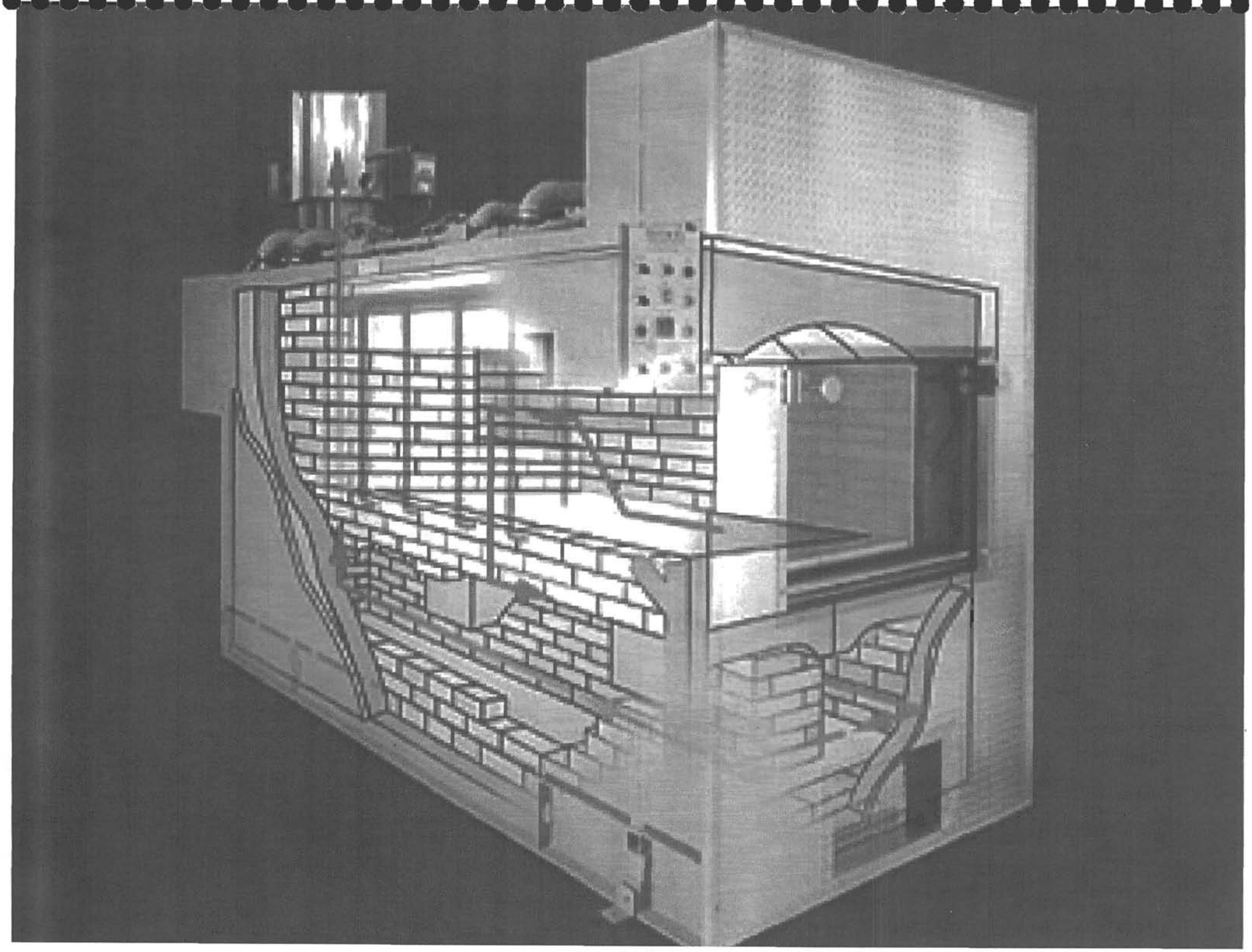


General Permit Renewal Application
Human Cremation Facility

Prepared for:

Baldwin-Fairchild Funeral Homes
FDEP File Number: 0950126-005-AG
301 NE Ivanhoe Boulevard
Orlando, Florida 32804

Prepared By:

AI Environmental Consulting Services, Inc.
370 S. North Lake Blvd, Ste. 1004
Altamonte Springs, Florida 32701

Date: June 2009

370 S. North Lake Blvd, Ste. 1004, Altamonte Springs, Florida 32701 - Phone: (407) 574-2021, FAX: (407) 574-2456
AI@CFL.RR.COM

June 22, 2009

Dickson E. Dibble
Florida Department of Environmental Protection
FDEP Receipts
PO Box 3070
Tallahassee, FL 32315-3070

Re: General Permit Application - Renewal
FDEP File Number: 0950126-005-AG
Baldwin Fairchild Cemeteries
301 NE Ivanhoe Boulevard
Orlando, Florida 32804

Dear Mr. Dibble:

Enclosed is one (1) copy of the above referenced application along with a check made payable to the ***Florida Department of Environmental Protection*** in the amount of $100.00 for the application fee.

I trust this application is complete; however, should you have any questions or need any additional information for issuing the general permit, please contact me at (407) 574-2021 or e-mail at AI@CFL.RR.COM .

Respectfully submitted,
AI ENVIRONMENTAL CONSULTING SERVICES

Luis Llorens
President/Project Manager

Enclosures: One (1) Application and check

370 S. North Lake Blvd, Ste. 1004, Altamonte Springs, Florida 32701 - Phone: (407) 574-2021, FAX: (407) 574-2456
AI@CFL.RR.COM

Application Contents

Form 62-210.920(2)(c) General Permit Application

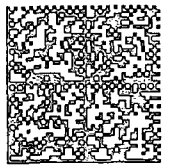
Attachment 1 - Compliance Test Reports
Attachment 2 - Equipment Drawings and Brochures

Baldwin-Fairchild et al.
301 N.E. Iva
Orlando, F

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

MAIL™

7003 1680 0002 4570 6210



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Tallahassee, Fl, 32315-3070